

CLAIMS

1. A method of producing a weld-cut sealing/heat-shrinkable packaging film formed of a PET-based block copolymer polyester, characterized by comprising:

melting at a temperature at or above its melting point a mixture "A" comprising:

(1) 100 parts by weight of a polyethylene terephthalate (PET)-based polyester "a" having a melt flow rate (MFR, JIS method: 280°C, load of 2.16 Kg) of 45 to 130 g/10 minutes as a main raw material;

(2) 0 to 100 parts by weight of an ethylene glycol/cyclohexane dimethanol/phthalic acid copolyester "b" as an auxiliary material;

(3) 0 to 20 parts by weight of a polyester elastomer "c" as another auxiliary material;

(4) 0.1 to 2 parts by weight of a mixture "f" containing a compound "d" having two epoxy groups and a compound "e" having three or more epoxy groups in a weight ratio of (95 to 40)/(5 to 60) as a binder; and

(5) 0.05 to 1 part by weight of an organic acid metal salt "g" as a catalyst;

turning the mixture "A" into block copolymer pellets by subjecting it to a uniform reaction under deaeration and dehydration in vacuum;

molding a mixture comprising 100 to 10 parts by weight of the block copolymer pellets and 0 to 90 parts by weight of PET "B" having an intrinsic viscosity of 0.60 to 0.80 dL/g into an unoriented film through a casting method; and

extending the unoriented film into an oriented film through a biaxial orientation method.

2. A method of producing a weld-cut sealing/heat-shrinkable packaging film formed of a PET-based block copolymer polyester, characterized by comprising:

melting at a temperature at or above its melting point a mixture "A" comprising:

(1) 100 parts by weight of a PET-based polyester "a" having an MFR (JIS method: 280°C, load of 2.16 Kg) of 45 to 130 g/10 minutes as a main raw material;

(2) 0 to 100 parts by weight of an ethylene glycol/cyclohexane dimethanol/phthalic acid copolyester "b" as an auxiliary material;

(3) 0 to 20 parts by weight of a polyester elastomer "c" as another auxiliary material;

(4) 0.1 to 2 parts by weight of a mixture "f" containing a compound "d" having two epoxy groups and a compound "e" having three or more epoxy groups in a weight ratio of (95 to 40)/(5 to 60) as a binder; and

(5) 0.05 to 1 part by weight of an organic acid metal salt "g" as a catalyst;

turning the mixture "A" into block copolymer by subjecting it to a uniform reaction under deaeration and dehydration in vacuum;

molding the obtained block copolymer into an unoriented film through a casting method; and

extending the unoriented film into an oriented film through a biaxial orientation method.

3. A method of producing a weld-cut sealing/heat-shrinkable packaging film formed of a PET-based block copolymer polyester, characterized by comprising:

melting at a temperature at or above its melting point a mixture "A" comprising:

(1) 100 parts by weight of a PET-based polyester "a" having an MFR (JIS method: 280°C, load of 2.16 Kg) of 45 to 130 g/10 minutes as a main raw material;

(2) 0 to 100 parts by weight of an ethylene glycol/cyclohexane dimethanol/phthalic acid copolyester "b" as an auxiliary material;

(3) 0 to 20 parts by weight of a polyester elastomer "c" as another auxiliary material;

(4) 0.1 to 2 parts by weight of a mixture "f" containing a compound "d" having two epoxy groups and a compound "e" having

three or more epoxy groups in a weight ratio of (95 to 40)/(5 to 60) as a binder; and

(5) 0.05 to 1 part by weight of an organic acid metal salt "g" as a catalyst;

turning the mixture "A" into block copolymer by subjecting it to a uniform reaction under deaeration and dehydration in vacuum;

extruding the block copolymer into a cast film;

while continuously extending the cast film into an oriented film through a biaxial orientation method.

4. A method of producing a weld-cut sealing/heat-shrinkable packaging film formed of a PET-based block copolymer polyester according to any one of claims 1 to 3, characterized in that a temperature for extending the film into the oriented film through a biaxial orientation method is 80 to 100°C.

5. A method of producing a weld-cut sealing/heat-shrinkable packaging film formed of a PET-based block copolymer polyester, characterized in that the weld-cut sealing/heat-shrinkable packaging film formed of a PET-based block copolymer polyester to be produced through the method according to any one of claims 1 to 3 has a degree of heat-shrinkage of 30% or more at 130°C.

6. A method of producing a weld-cut sealing/heat-shrinkable

packaging film formed of a PET-based block copolymer polyester, characterized in that the weld-cut sealing/heat-shrinkable packaging film formed of a PET-based block copolymer polyester to be produced through the method according to any one of claims 1 to 3 has a weld-cut sealing strength of 500 g/15 mm width or more.

7. A method of producing a weld-cut sealing/heat-shrinkable packaging film formed of a PET-based block copolymer polyester according to any one of claims 1 to 3, characterized in that the PET-based polyester "a" comprises at least one selected from the group consisting of PET having an intrinsic viscosity of 0.60 to 0.80 dl/g, and a recycled product of a PET-based aromatic polyester molded product.

8. A method of producing a weld-cut sealing/heat-shrinkable packaging film formed of a PET-based block copolymer polyester according to any one of claims 1 to 3, characterized in that the compound "d" comprises at least one selected from the group consisting of: aliphatic ethylene glycol diglycidyl ether, polyethylene glycol diglycidyl ether, and hexamethylene diglycidyl ether; alicyclic hydrogenated bisphenol A diglycidyl ether; and aromatic bisphenol A diglycidyl ether.

9. A method of producing a weld-cut sealing/heat-shrinkable

packaging film formed of a PET-based block copolymer polyester according to any one of claims 1 to 3, characterized in that the compound "e" comprises at least one selected from the group consisting of: aliphatic trimethylolpropane triglycidyl ether, glycerin triglycidyl ether, epoxidized soybean oil, and epoxidized linseed oil; heterocyclic triglycidyl isocyanurate; and aromatic phenol novolac epoxy resin and cresol novolac epoxy resin.

10. A method of producing a weld-cut sealing/heat-shrinkable packaging film formed of a PET-based block copolymer polyester according to any one of claims 1 to 3, characterized in that the coupling reaction catalyst "g" comprises a composite containing at least two kinds of salts selected from lithium salt, sodium salt, potassium salt, magnesium salt, calcium salt, zinc salt, and manganese salt of one of stearic acid and acetic acid.

11. A method of producing a weld-cut sealing/heat-shrinkable packaging film formed of a PET-based block copolymer polyester, characterized by comprising:

melting at a temperature at or above its melting point a mixture A' comprising:

(1) 100 parts by weight of a PET-based polyester "a" having an MFR (JIS method: 280°C, load of 2.16 Kg) of 45 to 130 g/10 minutes as a main raw material;

(2) 0 to 100 parts by weight of an ethylene glycol/cyclohexane dimethanol/phthalic acid copolyester "b" as an auxiliary material;

(3) 0 to 20 parts by weight of a polyester elastomer "c" as another auxiliary material;

(4) 1 to 15 parts by weight of a binder masterbatch "i" comprising 100 to 50 parts by weight of a mixture "f" containing a compound "d" having two epoxy groups and a compound "e" having three or more epoxy groups in a weight ratio of (95 to 40)/(5 to 60), and 100 parts by weight of a base substance "h" as a binder; and

(5) 0.5 to 5 parts by weight of a catalyst masterbatch "k" containing 5 to 15 parts by weight of an organic acid metal salt "g" and 100 parts by weight of a base substance "j" as a catalyst;

turning the mixture A' into a block copolymer by subjecting it to a uniform reaction under deaeration and dehydration in vacuum; and

molding the obtained block copolymer into an oriented film through a biaxial orientation method or a tubular method.